

REMARKS

The Application has been carefully reviewed in light of the Office Action dated July 7, 2004 (Paper No. 20). Claims 1, 19 to 24, 26 to 28, 32 and 33 are in the application, of which Claim 1 is the only independent claim. Claims 29 to 31 are being canceled without prejudice or disclaimer of the subject matter. Claims 1, 19, 21 and 27 are being amended, and Claims 32 and 33 are being added. Reconsideration and further examination are respectfully requested.

Claims 1, 29 and 30 are rejected under 35 U.S.C. § 112, second paragraph, and Claim 29 is rejected under 35 U.S.C. § 112, first paragraph. Without conceding the correctness of these rejections Claims 29 and 30 are cancelled. Claim 1 is amended to read that the signal line is adapted to read out, from image pick up elements, electrical signals which are amplified by a preamplifier. Reference is made to Figure 3, for example, in which signals Lc, which are read out from photoelectric conversion elements 21, are amplified by preamplifier 26. Reconsideration and withdrawal of the rejection of Claim 1 are respectfully requested.

Claims 1, 19 to 24, 27, 28 and 30 are rejected under 35 U.S.C. § 103(a) over JP 11-151233 (Nonaka) and U.S. Patent No. 6,567,125 (Shimizu), and Claims 26 and 29 are rejected under 35 U.S.C. § 103(a) over Nonaka, Shimizu and U.S. Patent No. 4,675,747 (Hanma).¹

¹ It is noted that the Office Action, at page 5, rejects Claim 25. However, since Claim 25 is not a pending claim, its inclusion in the list of rejected claims is believed to be a typographical error. In addition, Claim 28 is not included in the list of rejected claims, but is discussed at page 8. Accordingly, it is assumed that Claim 28 was inadvertently omitted in the list at page 5 of the Office Action. If such assumptions are incorrect, clarification is respectfully requested in the next Office Action.

The present invention generally concerns an image sensing apparatus, in which a signal line that is used to read out electrical signals from image pick up elements is used to set the image pick up elements to an initial state. Reference is made to Figures 2 and 3 of the subject application, photoelectric conversion element 21 is set to an initial state by setting signal line Lc to a reference potential via reset switching device 25 and reset reference power source 24.

In addition, according to the present invention, the power is supplied to a preamplifier amplifying the electrical signals read out by the signal line after power is supplied to the signal line to set the signal line to a reference potential and to initialize the image pickup elements.

By virtue of this arrangement, it is possible to provide a simplified sensor and an image sensing apparatus that supplies electrical power to a preamplifier after initialization of an image pick up element.

Turning to the specific language of the claims, Claim 1 defines an image sensing apparatus comprising a radiation generating apparatus, sensor, signal line, preamplifier, first power source, second power source and control circuit. The radiation generating apparatus is adapted to generate radiation after receiving an exposure preparation signal. The sensor comprises a plurality of image pick up elements for converting radiation to electrical signals. The signal line is adapted to read out the electrical signals from the image pick up elements. The preamplifier is adapted to amplify the electrical signals read out from the image pickup elements. The first power source, which is connected to the signal line, is adapted to set the signal line to a reference potential so as to set the image pick up elements to an initialized state, and the second

power source is adapted to supply electrical power to the preamplifier . The control circuit is adapted to control the first power source and the second power source such that the first power source supplies electrical power after a first period of time elapses from receipt of said exposure preparation signal, and the second power source supplies electrical power to the preamplifier after a second period of time, which is longer than the first time period, elapses from receipt of the exposure preparation signal.

The applied art, namely Nonaka and Shimizu, is not seen to disclose a first power source connected to a signal line adapted to read out electrical signals from image pickup elements, the first power source adapted to set the signal line to a reference potential thereby setting the image pickup elements to an initialized state, wherein the first power source is controlled to supply power after a first period of time elapses from receipt of an exposure preparation signal, and wherein a second power source adapted to supply electrical power to a preamplifier is controlled to supply the power to the preamplifier after a second period of time, which is longer than the first period, from receipt of the exposure preparation signal.

Initially, the Office Action's citation to Figure 2 of Nonaka as showing an output amplifier is noted. It is assumed that the Office Action is referring to the integrator "Amp" shown in Figure 2.

Nonaka is seen to describe an image sensing apparatus, in which image pick up elements are initialized by setting a signal to a reference potential. See Figure 2, refresh power V_g . However, Nonaka is not seen to disclose a signal line which is set to a reference potential and thereby initializes image pick up elements, the signal line also used to read out electrical signals from the image pick up elements. In addition, Nonaka is not

seen to show the timing of supply of power to the signal lines and the preamplifier as in Claim 1.


Applicants submit that Shimizu is also not seen to disclose each and every feature of the claim. Therefore, for at least the foregoing reasons, Claim 1 is believed to be in condition for allowance.

The other claims are each dependent from the independent claims discussed above and are therefore believed patentable for the same reasons. Because each dependent claim is also deemed to define an additional aspect of the invention, however, the individual consideration of each on its own merits is respectfully requested.

In view of the foregoing, the entire application is believed to be in condition for allowance, and such action is respectfully requested at the Examiner's earliest convenience.

Applicants' undersigned attorney may be reached in our Costa Mesa, California office by telephone at (714) 540-8700. All correspondence should be directed to our address given below.

Respectfully submitted,


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